



ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

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Friday, July 8, 1977

Another captive test precedes free flight

The second captive active Orbiter test flight with Joe H. Engle and Richard H. Truly at the controls of the Enterprise June 28 was declared "phenomenally successful" by ALT Manager Donald K. Slayton.

A third and final captive active flight has been scheduled for no earlier than July 22 to be followed by the first free flight and landing of the Orbiter on Aug. 12.

The ALT first crew of Fred W. Haise Jr. and Gordon Fullerton is scheduled to fly both the third captive active and the first free flight.

"We're essentially ready to go free flight at this point," Slayton said during the post-flight news conference June 28.

"It was a super flight from the standpoint of gathering the data," crew commander Engle reported.

The Orbiter, attached to the top of its Boeing 747 carrier aircraft, was flown at 230 and 270 knots (compared to 180 knots for the first CA flight) and the crew carried out flutter and speed brake checks.

They also conducted an Auto-land fly-through and a separation data run.

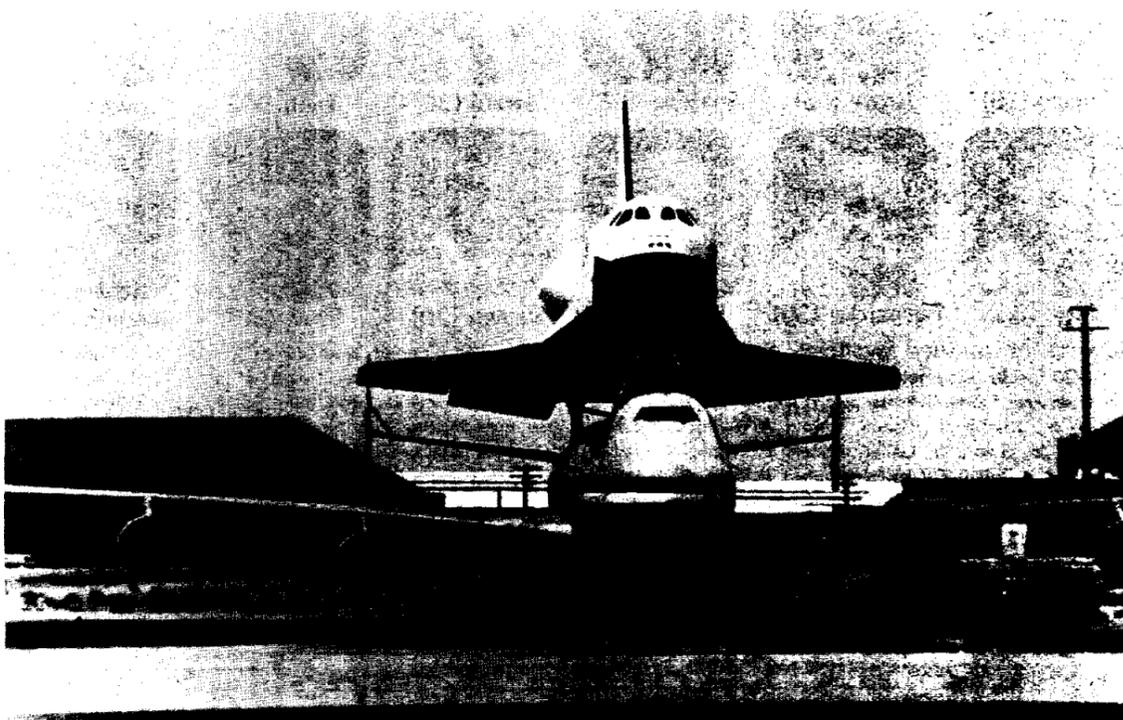
The flight began ahead of schedule at 9:49 a.m. CDT with touchdown at 10:52 a.m., a duration of 63 minutes.

Once again, 747 pilot Fitzhugh Fulton was praised for his handling of the carrier aircraft.

Minutes after touchdown, one of the Orbiter crew members was heard to comment on the air-to-ground: "I was going to call the tower to see if we were down yet." Truly later said, "I never felt the wheels touch the ground."

At the press conference, Fulton echoed Slayton's assessment of the test, saying, "We're ready to go to launch (separation) when the time comes."

Two Auxiliary Power Units are being changed out on the Orbiter before the July 22 captive flight. The ground crew spotted a leak from one of the APU's after the last flight.



747/Orbiter taxis in at Edwards AFB after second successful captive flight

JSC's energy usage still needs reducing

Have you received your latest electric bill? Be prepared for a shock. You aren't the only one concerned over rising utility costs. JSC management has been facing this issue for nearly four years.

It was back in FY 1973 that JSC began an energy conservation program to achieve an energy usage reduction goal of 50 per cent by the FY 1980-85 timeframe.

Current records at JSC indicate that electrical usage accounts for 46.6 per cent of the total energy consumption, followed by natural gas at 32.1 per cent, aircraft fuels at 19.6 per cent, and all others at 1.7 per cent.

Since FY 1973, JSC has achieved an impressive 36 per cent reduction in total energy consumption, but the additional 14 per cent goal will be difficult to achieve without a total commitment of all personnel.

Major emphasis thus far has been directed toward a few very important activities which include:

- Improving the operational efficiency of the central heating and cooling plant
- Shutting down of equipment and systems after normal working hours and on weekends
- Cutting back of lighting levels
- Setting comfort cooling and heating levels to comply with Presi-

dent Carter's energy guidelines (78-80°F)

- Analyzing special equipment environmental requirements to achieve possible reductions in energy usage
- Establishing building comfort cooling requirements based on working shifts

(Continued on page 4)



ENTERPRISE BOUND — Astronauts Joe Engle and Richard Truly (center, l to r) walk to the 747/Orbiter for the second captive active flight at Dryden Flight Research Center. At left is astronaut crew coordinator Rick Nygren. At rear is suit technician Joe Schmitt. More photos, page 4



TV PERSONALITY AT JSC — Television talk show hostess Sandy Hill of ABC-TV's "Good Morning America" is shown the controls of the Orbiter remote manipulator arm in Bldg.

9-A by John R. Smith, manager of the Manipulator Development Facility. They are standing in a mock-up of the Orbiter aft crew station.

Energy seminars continue

Four seminars on energy remain in the series being conducted as part of the 1977 Summer Faculty Institutes held at JSC.

The seminars are held every Tuesday from 2-3:30 p.m. in the Bldg. 30 auditorium. They are open to employees.

On July 12, Augustine Verrengia of JSC's Space Shuttle Program Office will discuss the Shuttle program.

On July 19, George W. Oprea, executive vice president of Houston Lighting & Power Co., will present "Energy, Employment and Growth."

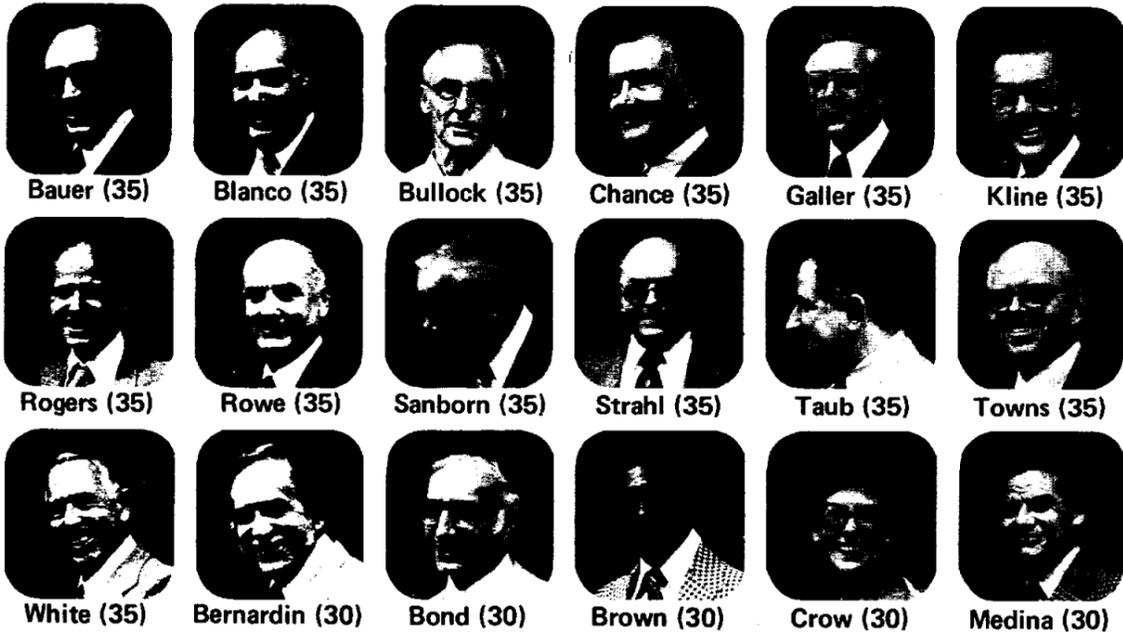
On July 26, Prof. H. W. Prengle Jr., chemical engineering, University of Houston, will present "Energy Conservation in Industrial Operation."

On Aug. 2, Dr. John H. Lichtblau, executive director of the Petroleum Industry Research Foundation, Inc., of New York City will present "World Oil Supply and Demand."

Space Week July 16-24

Governor Dolph Briscoe has proclaimed the week of July 16-24 as Space Week to "call to the attention of all citizens of Texas the eighth anniversary of man's historic first steps on the Moon."

NASA and the Johnson Space Center, through the success of the Apollo program, "contributed much to the prestige of Texas as a scientific and technological center," the proclamation states.



LENGTH OF SERVICE AWARDS — Ceremonies were held June 20 for 39 JSC employees with 25 years or more government service. Thirty-five-year award winners were: Charles J. Bauer Jr., Joseph A. Blanco, Harold A. Bullock, Atlas C. Chance Jr., Leon W. Galler, Robert L. Kline, Charles E. Rogers Jr., Dailey E. Rowe, Rodney H. Sanborn, Pete D. Strahl, Willard M. Taub, Albert V. Towns and Arthur R.

White; not pictured were James T. Duff and Thomas P. MacCarrone. Thirty-year award winners were: Robert M. Bernardin, Aleck C. Bond, Peter Brown Jr., Juanita T. Crow and Pete Medina; not pictured were Walter J. Kliner and Helen W. McCord. Seventeen employees received 25-year length-of-service awards.

Kirkpatrick chosen Secretary of Month

M. Caroline Kirkpatrick, secretary for the ALT Management Operations Office, was chosen JSC Outstanding Secretary for June.

Kirkpatrick was nominated for the award by her supervisor, Thomas U. McElmurry. She receives a plaque and \$100.

"During the past four years, the ALT Project has progressed through planning and developmental phases into the final implementation phase," McElmurry said. "The exceptional secretarial and administrative support provided by Ms. Kirkpatrick to the ALT Project over the entire period has been a vital part of the total effort."

"Very early she assumed responsibility for project administrative tasks, freeing her supervisor and a staff of four engineers for more technically oriented duties," McElmurry said.

"By acquiring a detailed knowledge of approach and landing testing and ALT team working relationships, she has been able to deal with almost all administrative problems unassisted by her supervisor or other staff members."

"The excellent working relationships of the ALT team and supporting organizations derives to a considerable degree from the fact that Ms. Kirkpatrick organized the

project office administrative function properly during the ALT planning phase," McElmurry said.

"Not satisfied with an outstanding performance in her present assignment, Ms. Kirkpatrick has carried a challenging scholastic workload in pursuit of a degree in management development at a local college in her off-duty time. She is an excellent student, ranking in the top 10 percent of her classes."

"The skill and professionalism which Ms. Kirkpatrick consistently applies to her work is contributing immeasurably to the success of the ALT Project," McElmurry concluded.



M. Caroline Kirkpatrick

U.S. Postal Service begins use of Space Shuttle cancellations

A new pictorial cancellation die hub calling attention to significant milestones in the Space Shuttle Program is being used on canceling machines in 20 locations throughout the country for specified periods of time, the U.S. Postal Service has announced.

The machine cancellations and their periods of use are intended to draw attention to major events leading up to the first manned orbital flight of the Space Shuttle vehicle in early 1979.

The new die hub is captioned "For Benefits on Earth," and the design features the official NASA logo for the Space Shuttle Program

A reproduction of the cancellation appears below:



The cancellation is being used in all the cities listed below for the periods indicated. The die hub will also be used continuously at the Kennedy Space Center, Florida, Post Office, and replaces the current Space Shuttle die hub now in use there.

The Postal Service announcement emphasized that the machine cancellation used in the 20 loca-

tions is a special cancellation rather than a philatelic cancellation.

Mail submitted for cancellation must bear the appropriate rate of postage, and mail may not be held to be canceled on a particular date.

The periods of use at the 20 locations are July 1 - Aug. 31, 1977; Dec. 1, 1977 - Jan. 31, 1978; March 1 - April 30, 1978; Dec. 1, 1978 - Jan. 31, 1979 and March 1 - April 30, 1979.

The 20 locations are as follows: Houston, TX 77013; Atlanta, GA 30304; Boston, MA 02109; Chicago, IL 60607; Dallas, TX 75221; Denver, CO 80202; Edwards, CA 93523; Huntsville, AL 35812; Kennedy Space Center, FL 32899, and Los Angeles, CA 90052. Also Memphis, TN 38101; Miami, FL 33152; Minneapolis, MN 55401; New Orleans, LA 70113; New York, NY 10001; Palmdale, CA 93550; St. Louis, MO 63155; San Francisco, CA 94101; Seattle, WA 98109, and Washington, DC 20013.

Academic achievements

Silveira receives honorary degree

Milton A. Silveira, deputy manager, Space Shuttle Orbiter Project Office, was presented an honorary doctor of science degree May 27 by the University of Vermont.

Silveira did his undergraduate work at the University of Vermont where he received a bachelor of science degree in mechanical engineering in 1951.

He earned a master of science degree in aeronautical engineering from the University of Virginia in 1961 and did additional graduate work at the University of Virginia,

Virginia Polytechnic Institute and the University of Houston.

Juan B. Gonzalez of the Administrative Services Branch, Management Services Division, received a bachelor of business administration May 13 during commencement ceremonies at the University of Houston at Clear Lake City.

Gonzalez completed his course work in night school over a five-year period. He has worked at JSC since 1964.

White Sands student named top July co-op

Larry J. Wofford, a senior in electrical engineering at New Mexico State University, has been chosen JSC Cooperative Education Student of the Month of July.

Wofford is now in his last work phase, assigned to the Laboratories Test Office at White Sands Test Facility, New Mexico.

He was recommended for the top co-op award by David L.

Pippen, Laboratories Test Office chief.

"I have supervised many co-op students during my tenure with NASA and there have been none better," Pippen said in his letter of recommendation.

Wofford "is very intelligent, a diligent worker and has the ability to apply theory to experience," Pippen said. "Thus far in his studies he has maintained a 3.98 grade point average out of a possible 4.0."

The student "has contributed significantly to several NASA WSTF Laboratories Test Office activities," the chief said.

"One of his major contributions was to assemble, troubleshoot and make operational an electronic console used to control a high vacuum, temperature-controlled, environmental test chamber," Pippen explained.

"The manufacturer of the console was unable to complete the contract" so "Wofford took the rough drawings and the components and assembled the control system."

"Since the system was one of a kind, many electronic problems existed" which Wofford "effectively solved," Pippen said.

"This type of complex problem solving would normally be assigned to a degreed engineer with several years of experience in digital and analog circuitry," he concluded.



AWARDS OF EXCELLENCE — JSC staff illustrator Raymond Bruneau, right, and Kentron Hawaii, Ltd. employee Norman Tiller, not shown, received the Society for Technical Communication's Award of Excellence for artwork submitted to the 24th International Technical Communication Conference held in Chicago in May. Presenting the award on behalf of the Houston chapter of STC is Jane Murtishaw of Ford Aerospace and Communication Corp.

ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

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Editor: Richard Finegan Photographer: A. "Pat" Patnesky

EAA ATTRACTIONS

TICKETS

The following tickets are available at the Bldg. 11 Exchange Store from 10 a.m.—2 p.m., Monday — Friday:

Astroworld — Adult & children tickets available for \$6.95 each. That's a \$1 discount.

Dean Goss Dinner Theater — Comedy production, *Agatha Christie Made Me Do It*. Tickets \$16/couple available for any night except Monday, Saturday.

Disney Magic Kingdom Club — Free membership cards.

Sea-Arama Marineworld — Tickets on sale, \$3.75 for adults, \$2.50 for children. Open until dusk, year round.

Six Flags — Adult & children tickets, \$6.75 each. That's a \$1.20 discount.

CIRCUS COMES TO TOWN

Discount tickets are available

from the EAA for the 6 p.m. July 24 performance of the Ringling Bros.-Barnum & Bailey Circus at the Summit.

General admission tickets, normally selling for \$6.50 per seat, are on sale at the Bldg. 11 Exchange Store for \$4 each. There are 250 available.

All tickets are for the center portion of the three-ring circus, including the first 12 rows of one section and the first three rows of two other sections.

NOSTALGIA DANCE

The EAA will sponsor a Nostalgia Dinner and Dance July 30 at the Gilruth Recreation Center with "golden oldie" music played discostyle by DJ Ed Green.

A breaded veal cutlet meal will be served and all drinks are included in the ticket price of \$7 person. The fun begins at 7 p.m. and ends at 1 a.m.

Tickets are available at the Bldg. 11 Exchange Store.

LEAGUE SPORTS

Fall softball with men's, women's and mixed leagues will start the week of Aug. 15. Team captains must enter teams between July 25 and Aug. 5.

Men's and women's volleyball leagues will also start the week of Aug. 15 with the same sign-up deadlines as softball.

JSC/BAY AREA RUN

JSC and the Bay Area Running Club will jointly sponsor a run Aug. 13 at the Gilruth Recreation Center. A 1-mile novice race and 4-mile event will be run.

Advance registration is requested at \$1 per person. Registration on the day of the race will cost \$2. Registration forms are available at the center or from the club. They

should be mailed to Dick Barton, Mail Code EX4.

Attempts are being made to have the race AAU recognized. Trophies will be awarded to top finishers in several categories.

SUPERTEAMS

The 1977 JSC Superteams Competition will be held Aug. 8-20 at the Gilruth Recreation Center. Each team is limited to 12 members and will compete in basketball, volleyball, tennis, relay race, softball, table tennis and tug-o-war.

Participation is open to all eligible to participate in JSC league sports. Entry fees are \$45 for EAA teams and \$75 for non-EAA teams, which includes cost of Superteams T-shirts for all participants. Register July 18-27.

ACAPULCO HOLIDAY

Fly round trip from Houston to

Acapulco, spend four days and three nights in the fabulous Acapulco Princess — one of the finest hotels in the world — and pay only \$209!

Sound too good to be true? Believe it. The JSC Cultural Club is making this vacation available to JSC and contractor employees over the Labor Day weekend. (It is also available over Columbus Day and Veterans Day weekends.)

Braniff Airlines will take you there and you can spend your days at the Acapulco Princess amid lush tropical gardens, waterfalls and lagoons beside a spectacular silver beach. The hotel features four swimming pools, indoor and outdoor tennis courts and one of Mexico's finest golf courses. The night life is just as fantastic.

Take advantage of the depreciation of the peso. Call Tom Gallagher, X-2657, or Gonzalo Montoya, 337-2406, for reservations.

Roundup Swap Shop

CARS & TRUCKS

74 Chevy Impala Sta Wgn. Pwr, air, auto, tint, cruise, roof rack. \$2,700. Norm, X-5954 or 482-3739.

72 Vega Wgn. Work car. Asking \$350. Kennedy, X-4247 or 488-5691.
73 MG Midget. 26K mi, FM radio, new tires & brakes, wire whis, good cond, 4-on-fl. Best offer over \$2,000. 334-5449.

72 Triumph TR-6. New paint, low miles, xInt cond, 24 mpg. Rogers, X5954 or 332-5490.

74 Orange VW. 52K mi, whitewalls. \$1,800. Dan, X-3021 or 331-3719.

76 Ford Pickup F-100. Explorer, pwr, radio, air, under 25K mi. Rauch, 488-6692 after 5.

73 Vega Sta Wgn. Auto, air, low miles. \$850. 333-3425 after 5.

73 Pontiac Catalina Sta Wgn. 46K mi, air, pwr brakes, AM/FM stereo, air shocks, steel radials, new paint/pipes/batt. \$2,550. Kinzler, 334-2449.

69 VW Bug. Orig owner, xInt cond, good tires, radio, manual/auto. \$700. Jackson, X-6161 or 643-0208.

65 Pontiac LeMans 2 dr. One owner, motor needs some work, 95K mi, buy for parts or to fix. Gallagher, 487-0149.

74 Ford Torino 4 dr. Pwr, air, auto, 351-V8, 42K mi. \$1,700. 334-4671 after 6.

71 Capri 1600cc. 4 spd, new clutch, 79K mi. Scott, X-5336 or 941-2131.

74 Opel Manta Luxus. 57K mi, new eng after 34K. \$2,200 or best offer. Calcote, X-5111 or 694-2513.

Swap Shop advertising is open to JSC federal and on-site contractor employees. Goods or services must be offered as advertised, without regard to race, religion, sex or national origin. Non-commercial personal ads should be 20 words or less, and include home telephone number. Typed or scribbled ad copy must be received by AP3/Roundup by Thursday of the week prior to publication.

73 Olds Cutlass Supreme. DK green w/white vinyl top, white int, auto, 350-V8, air, pwr, steel radials, extra clean. \$2,295. McCollum, X-5031 or 488-4696 after 5.

76 Merc Cougar. AM/FM stereo 8 trk; pwr incl windows, seat, tilt whl; cruise; metallic aqua blue; 7,000 mi. \$5,600. 488-5499 after 5.

CYCLES

70 Honda SL350, runs good, asking \$350. 71 Suzuki TS90, needs eng repair, \$50 or will buy wrecked Suzuki TS 90/125 w/eng. \$50. Kennedy, X-4247 or 488-5691.

74 Yamaha 100, good cond, \$200. 73 Yamaha 250, runs, needs little work, \$100. MX73 Yamaha 125, good cond, extras, \$200. Will trade. Herring, 471-4069 after 5 M-F.

72 Kawasaki 750. Good cond, 2,000 mi, adult owner. \$750. Kilbourn, X-4401 or 482-7879 evngs.

71 Suzuki 750. XInt cond. \$750. Nixon, X-3751 or 474-5827 after 5.

75 Honda 750 Super Sport. Blue, rackfactory lugg carr/sissy bar, xInt cond. \$1,600. Bullock, 488-6095.

74 Yamaha 360 MX trailbike. Low miles, mint cond, never raced. \$450. 991-4626.

76 Honda CB750. Lugg carr, cruise

cont, manual, adult owner, xInt cond. \$1,475 or consider trade for pickup. 482-6542.

Kick stand for Honda 100. New \$30, sell \$10. Smith, X-4468 or 488-3238.

Bicycle, Sears 5 spd, girls. Slightly used, papers & warranty. \$35. Eggleston, 482-4239.

BOATS & PLANES

75 Irwin 28 sailboat. Loaded, xInt cond. \$18,900. 488-0971.

16' fiberglass sailboat w/trailer & sails XInt for Bay, steel centerboard & rudder. \$1,050. Fox, 333-4460.

Sailboat, Cal 229. 3 1/2 yrs old, diesel, whl steering, pressurized water, shower, dinghy w/OB, many extras. MacLeod, X-3741 or 488-2838 nites or wkends.

23' Cruiser V-bottom boat. 225HP I/O, newly refinished, xInt cond. Tandem trailer w/elec winch. \$3,000. Bullock, X-3981 or 482-6401.

Pilots: Take your vacation trip in a Skyhawk II. Full IFR. Call 471-4627 or Poindexter at 474-2203.

PROPERTY & RENTALS

Rent: Galveston Island Beach Cottage. Furn, access to bay & gulf. \$175/wk. 334-1640 after 6.

Rent: Vacation Cottage on Gulf.

Families only. \$40/day or \$150/wk. 334-2360.

Rent: 3 BR home, Seabrook. No pets, family only. \$250/mo. 334-2360.

Sale: 3-1-1 (plus carport). Lg wooded, fenced lot, xInt starter house. 2924 Fleetwood, Pinewood Village. \$23,900. Spivey, 529-5891.

Sale: Timber Cove, 4-2 1/2-2. Lg corner lot, firepl in fam rm, bkfst rm & bar, din & llv rms, fruit trees & garden. \$705. Hinners, 334-1639 after 5.

Sale: Lake Livingston Holiday Shores, 3 lots. Wooded, restricted subdiv w/pool, tennis, boat ramp, in natl forest. Low down, 7 1/2% loan. Ward, X-2386 or 488-5445.

San Jac Coll, 3 BR, 2 bath duplex. Appliances, carpet. \$285/mo. 944-8233.

Sale: Islander East Condo, top floor efficiency unit. XInt gulf view, balcony, tennis, beach & pool, furn. 481-3397 after 6.

Rent: Vacation retreat, Cape Royale on Lake Livingston. Tennis, pool, boat launch, golf. By wk or mo. 488-3746.

Galveston West End. 2 BR By-the-Sea Condo apt, full furn. \$180/wk off season, \$260/wk in season. Clements, 474-2622.

Lease: Camino South 4-2-2. No pets. \$425/mo plus dep & references. Avail July 15. Kirby, X-2666 or 488-1301.

Reserve for summer vacation now. Jamaica Beach, Galveston. New 2 story. \$175/wk. 334-1640 after 5.

PETS

Two Doberman pups. Papers, shots, wormed. \$150/ea. Ashley, X-3481 or 332-2080.

Free to good home. 4 terrier/dachshund pups, shots, wormed. Ashley, X-4381 or 332-2080.

Siamese kittens. Box trained, 6 wks old. \$5. Wade, X-5961.

Reg Irish setter. Male, 5 yrs old, good watchdog, some training. \$90. House, X-7016.

MUSICAL INSTRUMENTS

Baldwin organ. Like new. Cooper, X-6161 or 333-5883.

Hammond Sounder Organ. 3 yr old, 5 diff beats, good cond, 3 music books incl. \$300. Beth, 474-2883.

Piano Lessons: Register early for beginner lessons (adult & children). Accepting limited no. starting Aug. 1. 333-4590 after 6.

STEREOS & CAMERAS

8-track stereo recorder/player, \$50. Multi-play turntable, \$40. Both need mech adjust, otherwise xInt. Glynn, X-3076 or 488-4453.

SX636 Pioneer stereo receiver, used 3 mo. \$175. CTF 7171 Pioneer cassette deck, used 1 yr, \$125. 946-4275.

Kowa Six professional ("Japanese Haselblad"), \$200. Also Leica 35mm w/50mm lens, \$250. 334-2360.

HOUSEHOLD ARTICLES

Formal dining set, pecan wood, lg

table w/2 leaves, 5 chairs & china cabinet. 4 chrome & black vinyl director's chairs. Royal standard typewriter. Cooper, X-6161 or 333-5883.

Smith Corona port elec typewriter w/case. Great for student, xInt cond, 2 yr old. \$100. Lyn, X-5111 or 488-1921 after 5.

Greenhouse sale: 10' hanging baskets, \$2.95; ceramics, plants, macrame. Over 100 items. Nassau Bay, 18127 Hereford. 14-16 July. Wood, 333-2373.

MISCELLANEOUS

Tow Hang Glider. 18' Ragallo glider, pilot range 150-200 lbs. Incl helmet, 300 ft tow rope, seat & quick release mech. Also, ping pong table, like new, fold-up w/rollers. Reina, 488-1326.

Pool table, 4'x8' w/balls, cues & wall rack, Sears. Not slate, needs new felt. Bonus: table tennis top w/wall rack for ping pong paddles & balls. \$60. Krause, 332-4865.

Two fashion dolls, xInt cond. 20" dressed in purple, \$20. 16" dressed in pink, \$5. Beth, 474-2883.

Electric ice cream freezer. Never used, 6 qts. \$15. Lapko, 946-4311.

Remington adding mach w/tape print-out, xInt cond, \$35. Zenith 17" B&W TV, \$40. 488-5564.

Trailer hitch for 73 Chevy sta wgn. Used once. Cost \$40, sell \$20. Smith, X-4468 or 488-3238.

S&W Model 15, Nickel, .38 Spec, \$170. Model 18, 22LR, \$190. Both new in box w/all papers. Handley, 482-7041.

Executive office furnishings. Make offer. 334-2360.

Complete set shop manuals for 76 Chevy Suburban K10; eng, chassis, electrical. Rogers, X-3576.

1970 Dodge parts. Kennedy, X-4247 or 488-5691.

Craftsman Accra-Arm 10" radial saw w/stand, Sears. XInt cond. \$175. Will deliver w/in reasonable dist. Bishop, X-4211 or 482-7471.

Honda Civic tires. Mounted & balanced. 4 new w/rims, \$80. 4 used 70% tread w/rims, \$50. 946-4275.

New front door for house. Cost \$75, sell \$45. New hollow core interior door, \$7. 333-3690 after 5:30.

Set of Arnold Palmer golf clubs. Good cond. \$70. House, X-7016.

Scuba tank w/boot & backpack, \$85. Regulator, \$70. Both, \$145. Fins, mask, tube, \$8. Jim, X-5404 or 332-5438.

WANTED

Centrifugal, gold or silver casting rig. 333-3291.

2 twin beds, firm or extra firm. 2-drawer file cabinet. 334-2768.

Ride needed from W Loop, Meyerland Plaza. Will pay. Or riders for carpool from Shepard at SW Fwy. Maria Engel, 488-4544 or 668-4598.

Need riders for carpool from W Loop, SW Fwy, Bellaire area. 8-4:30. McLaughlan, X-5536 or 661-2974.

Firefighters needed. Adult residents of CLC for CLC Vol Fire Dept. Will train & equip. 488-0023 anytime.

LOST & FOUND

Lost: Ladies gold Gruen watch In Bldg 31 parking lot, June 20. Joena, X-2383, Bldg 29, Rm 203.

JSC crossword

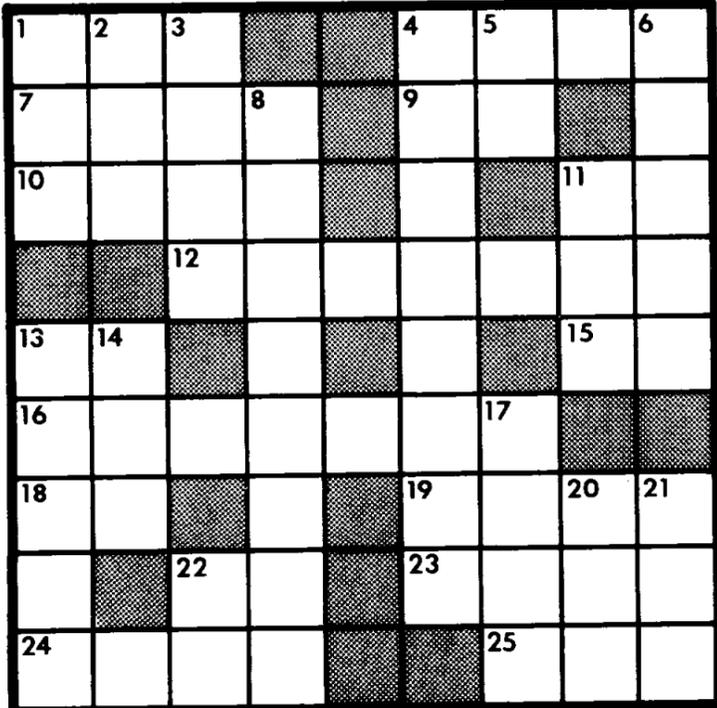
(See answers, page 4)

ACROSS

- The check
- Gentle
- Continent
- To be (1st pers. sing.)
- Baghdad is its capital
- Place (abbr.)
- Dark area on the surface of same
- Not "DC"
- Russian affirmative
- Heat related
- Symbol for Lithium
- Forfeited
- Kung ___ or ___ Manchu
- Placed
- Resorts
- Desiccate

DOWN

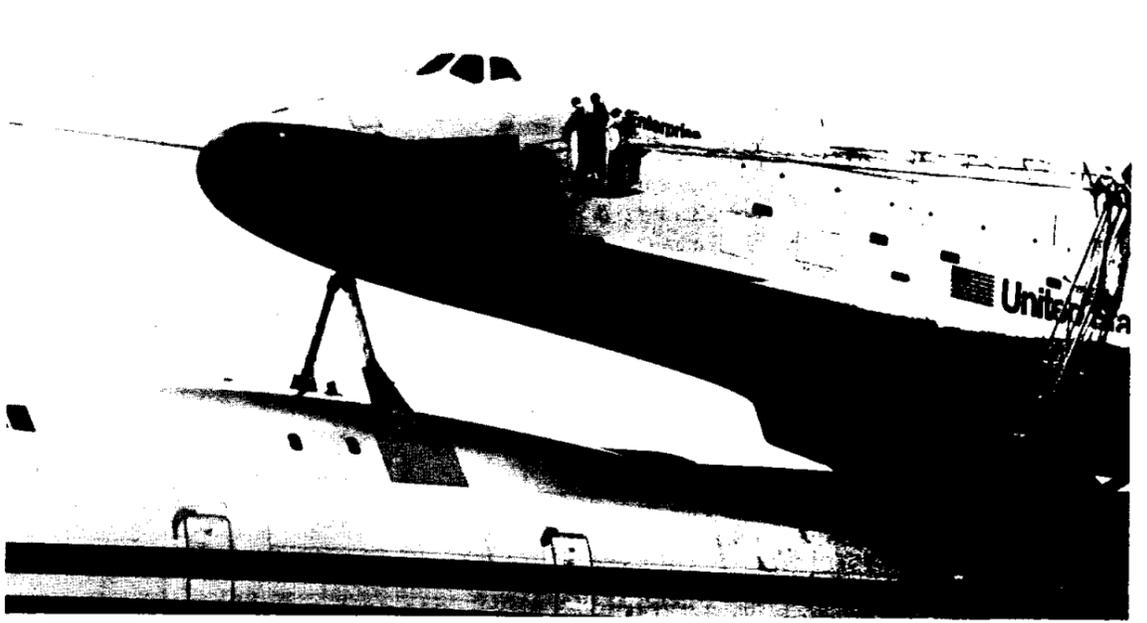
- Tropical cocktail; Mai ___
- Automatic Send/Receive (acronym)
- Diagonal to grain
- NASA center
- Contraction involving 9 Across
- Denotes amount of change



- LM which became lifeboat
- Seed vessel
- Mercury launch vehicle
- Greek "X"
- Stress forces
- Title of respect
- Temporary duty (acronym)
- Note of scale



SECOND CAPTIVE ACTIVE — Above: Astronauts Richard Truly, left, and Joe Engle enjoy a formal pre-flight breakfast at Dryden Flight Research Center. Top right: Engle and Truly leave Orbiter by side hatch after flight with the help of "cherry picker." Center right: Truly adjusts his helmet while conferring with suit technician Joe Schmitt during pre-flight equipment check. Bottom right: Engle examines equipment with suit technician Al Rochford. See story and additional photos page 1.



JSC energy consumption...

(Continued from page 1)

• Planning only essential operations during the Christmas holidays.

Also, certain facility modifications are planned with the objectives of energy reduction and conservation. These modifications include solar panels mounted on the roof of Building 30 to provide heated water for environmental systems within the building and conversion to electric drive chillers at the central heating and cooling plant to further improve efficiency.

With budget constraints becoming tighter each fiscal year, JSC must seriously and continually concern itself with reductions in energy usage.

Constantly rising utility rates are making energy costs a larger part of the budget each year and will continue to do so in the future.

In FY 1973, JSC's annual consumption of energy for facilities

was 3,700 trillion BTU's at a cost of \$1.6 million.

In FY 1977 total consumption has been reduced to an estimated 2,300 trillion BTU's but at an increased cost of \$4.3 million.

This represents an increase of 169 per cent in the fuel bill since FY 1973.

FY 1978 predictions show an estimated fuel consumption of 2,200 trillion BTU's at a cost of \$5.4 million.

Long-range predictions indicate that by FY 1980 the cost for this

same amount of fuel could be as much as double this amount.

How can JSC cope with this situation, particularly with associated budget reductions? Rising utility costs with corresponding budget cuts mean that many desired and needed services must be eliminated or severely curtailed.

The FY 1978 budget for center operation at JSC will be reduced by approximately \$2 million in R&PM funds.

In an effort to meet the FY 1978 R&PM operating budget guidelines, the center will reduce or eliminate: janitorial services; laundry services; literary translations and library expenditures; motion pictures and audiovisual support; grounds maintenance; minor construction, alteration, and repair contracts; telecommunication services; transportation; supplies, and equipment purchases.

We are all going to have to tighten our belts in order to maintain JSC's excellent record of performance despite the rising costs of energy.

The Center Operations Directorate has a full-time team now devoted to looking at ways to eliminate or reduce energy consumption.

Every civil service and contractor employee should be on the energy team. Suggestions on ways to conserve energy may be submitted through the Suggestion Program or brought to the attention of Center Operations Directorate.

Alley Theatre subscriptions

The Alley Theatre Corporate Subscription program is again being offered to NASA and contractor employees. Season tickets are available for next year's five performances at a low price of \$19.95.

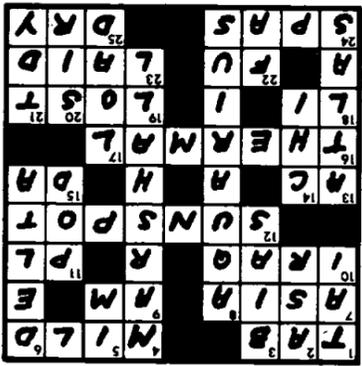
An Alley Theatre brochure will be distributed soon by your EAA representative which will explain the program. The brochure contains an order form for subscriptions.

If you are planning to subscribe, fill out the form, enclose a check payable to Alley Theatre or indicate a charge plan on the form, and send to Cindy Kohrs, EG (X-4282).

Corporate Subscription coupon books will be mailed just prior to the opening of the 77-78 season in October. Deadline for placing orders under this special program is August 15, so don't delay.

JSC crossword answers

(See puzzle, page 3)



(See charts below)

